

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 3 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-143. (Cancelled)

144. (Currently amended) An isolated antibody or antigen binding portion thereof which binds to an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a monoclonal antibody selected from the group consisting of an E99, a J415, a J533 and a J591 monoclonal antibody, comprising an antigen binding portion of an amino acid sequence selected from the group consisting of SEQ ID NO:8 (variable heavy chain), SEQ ID NO:19 (variable light chain), an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB 12126, and an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB 12126.

145.-155. (Cancel)

156. (Currently amended) ~~An isolated antibody or antigen binding portion thereof according to claim 144 or 150, wherein the antibody is a monoclonal antibody or an antigen binding portion derived from a monoclonal antibody.~~

157. (Currently amended) ~~An isolated antibody or antigen binding portion thereof according to claim 144 or 150, wherein the antibody or antigen binding portion thereof is internalized with the prostate specific membrane antigen.~~

158. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 4 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

according to claim 144 or 150, wherein the antigen binding portion is selected from the group consisting of a Fab fragment, a F(ab')₂ fragment, and a Fv fragment.

159. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~ which binds to an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a monoclonal antibody selected from the group consisting of an E99, a J415, a J533 and a J591 monoclonal antibody according to claim 144 or 150 further comprising wherein said antibody or antigen binding portion thereof is bound to a cytotoxic drug.

160. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~ according to claim 159, wherein the cytotoxic drug is selected from the group consisting of a therapeutic drug, a compound emitting radiation, molecules of plant, fungal, or bacterial origin, biological proteins, and mixtures thereof.

161. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~ according to claim 159, wherein the cytotoxic drug is a compound emitting radiation.

162. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~ according to claim 161, wherein the compound emitting radiation is an alpha-emitter.

163. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~ according to claim 162, wherein the alpha-emitter is selected from the group consisting of ²¹²Bi, ²¹³Bi, and ²¹¹At.

164. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~ according to claim 161, wherein the compound emitting radiation is a beta-emitter.

165. (Currently amended) ~~An isolated antibody or antigen binding portion thereof~~

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 5 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

according to claim 164, wherein the beta-emitter is ^{186}Re .

166. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 164, wherein the beta-emitter is ^{90}Y .

167. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 161, wherein the compound emitting radiation is a gamma-emitter.

168. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 167, wherein the gamma-emitter is ^{131}I .

169. (Previously Cancelled)

170. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 160, wherein the cytotoxic drug is a molecule of plant origin.

171. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 160, wherein the cytotoxic drug is a biological protein.

172. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof which binds to an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a monoclonal antibody selected from the group consisting of an E99, a J415, a J533 and a J591 monoclonal antibody, according to claim 144 or 150 further comprising wherein the antibody or antigen binding portion thereof is bound by a label.

173. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 172, wherein the label is selected from the group consisting of a fluorescent label, a biologically-active enzyme label, a radiolabel, a nuclear magnetic resonance active label,

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 6 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

a luminescent label, and a chromophore label.

174. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim 173, wherein the radiolabel is selected from the group consisting of ^{32}P , ^{125}I , ^3H , ^{14}C , and ^{188}Rh .

175. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim 173, wherein the label is the radiolabel ^{131}I .

176. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim 173, wherein the label is the radiolabel $^{99\text{m}}\text{Tc}$.

177. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim 173, wherein the label is the radiolabel ^{111}In .

178. (Currently amended) An isolated cell which produces the antibody of claim 144 ~~or~~ 150.

179. (Previously presented) The cell of claim 178, which is derived from a lymphocytic cell line.

180. (Currently amended) A composition comprising:
an antibody or antigen binding portion thereof according to claim 144 ~~or~~ 150; and
a pharmaceutically acceptable carrier, excipient, or stabilizer.

181. (Previously presented) A kit for detecting prostate cancer comprising:
an antibody or antigen binding portion thereof according to claim 172 and means to
detect the label.

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 7 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

182. (Previously presented) A kit according to claim 181, wherein the label is selected from the group consisting of a fluorescent label, a biologically-active enzyme label, a radiolabel, a nuclear magnetic resonance active label, a luminescent label, and a chromophore label.

183. (Previously presented) A kit according to claim 181, wherein the antibody or antigen binding portion thereof is in a composition further comprising a pharmaceutically acceptable carrier, excipient, or stabilizer.

184. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof which binds to an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a monoclonal antibody selected from the group consisting of an E99, a J415, a J533 and a J591 monoclonal antibody, comprising an antigen binding portion of an amino acid sequence selected from the group consisting of SEQ ID NO:8 (variable heavy chain), SEQ ID NO:19 (variable light chain), an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126, and an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126, wherein the antibody or antigen binding portion thereof is coupled to a cytotoxic drug of bacterial origin.

185. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof which binds to an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a monoclonal antibody selected from the group consisting of an E99, a J415, a J533 and a J591 monoclonal antibody according to claim 184 which comprises an antigen binding portion of an amino acid sequence of SEQ ID NO:8 (variable heavy chain) or an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126 and an antigen binding portion of an amino acid sequence of SEQ ID NO:19 (variable light chain) or an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126 wherein the antibody or antigen binding portion thereof is coupled to a

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 8 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

radioisotope.

186. (Currently amended) ~~An isolated antibody or antigen binding portion thereof according to claim [[184]] 144, which comprises an antigen binding portion of an amino acid sequence selected from the group consisting of SEQ ID NO:8 (variable heavy chain) and SEQ ID NO:19 (variable light chain) wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J591 monoclonal antibody.~~

187. (Currently amended) ~~An isolated antibody or antigen binding portion thereof according to claim [[184]] 144, which comprises an antigen binding portion of an amino acid sequence from SEQ ID NO:8 (variable heavy chain) and an antigen binding portion of an amino acid sequence from SEQ ID NO:19 (variable light chain) wherein the antibody or antigen binding portion thereof binds to an epitope of prostate specific membrane antigen (PSMA) which is also recognized by the J415 monoclonal antibody.~~

188. (Currently amended) ~~An isolated antibody or antigen binding portion thereof according to claim [[184]] 159, which comprises an antigen binding portion of an amino acid sequence selected from the group consisting of an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126, and an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126 wherein the antibody is a monoclonal antibody or an antigen binding portion derived from a monoclonal antibody.~~

189. (Currently amended) ~~An isolated antibody or antigen binding portion thereof according to claim [[184]] 159, which comprises an antigen binding portion of an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126 and an antigen binding portion of an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126 wherein the antibody or~~

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 9 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

antigen binding portion thereof is internalized with PSMA.

190. (Currently amended) An isolated antibody or antigen binding portion thereof, according to claim 159, wherein the antigen binding portion is selected from the group consisting of Fab fragment, a F(ab')₂ fragment, and a Fv fragment comprising an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:6 (variable heavy chain), SEQ ID NO:17 (variable light chain), a nucleic acid sequence which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB 12126, and a nucleic acid sequence which encodes the variable light chain produced by the hybridoma having ATCC deposit no. HB 12126, coupled to a cytotoxic drug of bacterial origin.

191. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim [[190]] 159, wherein the cytotoxic drug is a toxin which comprises an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence of SEQ ID NO:6 (variable heavy chain) or a nucleic acid sequence which encodes the variable heavy chain of the hybridoma having ATCC deposit no. HB 12126 and an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence of SEQ ID NO:17 (variable light chain) or a nucleic acid sequence which encodes the variable light chain produced by the hybridoma having ATCC deposit no. HB 12126.

192. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim [[190]] 159, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J591 monoclonal antibody which comprises an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:6 (variable heavy chain) and SEQ ID NO:17 (variable light chain).

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 10 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

193. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim [[190]] 159, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J415 monoclonal antibody which comprises an antigen-binding portion of an amino acid sequence encoded by a nucleic acid sequence from SEQ ID NO:6 (variable heavy chain) and an antigen-binding portion of an amino acid sequence encoded by a nucleic acid sequence from SEQ ID NO:17 (variable light chain).

194. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim [[190]] 172, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J591 monoclonal antibody which comprises an antigen-binding portion of an amino acid sequence encoded by a nucleic acid sequence selected from the group consisting of a nucleic acid sequence which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB 12126, and a nucleic acid sequence which encodes the variable light chain produced by the hybridoma having ATCC deposit no. HB 12126.

195. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim [[190]] 172, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J415 monoclonal antibody which comprises an antigen-binding portion of an amino acid sequence encoded by a nucleic acid sequence which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB 12126 and an antigen-binding portion of an amino acid sequence encoded by a nucleic acid sequence which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB 12126.

196. (Currently amended) An isolated antibody or antigen binding portion thereof according to claim 184 or 190, wherein the antibody is a monoclonal antibody or an antigen binding portion derived from a monoclonal antibody.

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 11 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

197. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 184 ~~or 190~~, wherein the antibody or antigen binding portion thereof is internalized with the prostate specific membrane antigen.

198. (Currently amended) An ~~isolated~~ antibody or antigen binding portion thereof according to claim 184 ~~or 190~~, wherein the antigen binding portion is selected from the group consisting of a Fab fragment, a F(ab')₂ fragment, and a Fv fragment.

199. (Currently amended) A composition comprising:
an antibody or antigen binding portion thereof according to claim 184 ~~or 190~~; and
a pharmaceutically acceptable carrier, excipient, or stabilizer.

200. (New) An antibody or antigen binding portion thereof according to claim 184, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J591 monoclonal antibody.

201. (New) An antibody or antigen binding portion thereof according to claim 184, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J415 monoclonal antibody.

202. (New) An antibody or antigen binding portion thereof according to claim 185, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J591 monoclonal antibody.

203. (New) An antibody or antigen binding portion thereof according to claim 185, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J415 monoclonal antibody.

Applicant : Neil H. Bander
Serial No. : 09/929,665
Filed : August 13, 2001
Page : 12 of 15

Attorney's Docket No.: 10448-184009 / MPI1996-
037P2RDV1ACNA1; CRF D-1912M

204. (New) A kit according to claim 181, wherein the cancer is selected from the group consisting of renal cancer, urothelial cancer, colon cancer, rectal cancer, lung cancer, breast cancer, metastatic adenocarcinoma to the liver, metastatic cancer to the bone marrow, and metastatic cancer to the lymph nodes.

205. (New) A kit according to claim 181, wherein the cancer is prostate cancer.

206. (New) A kit according to claim 181, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J591 monoclonal antibody.

207. (New) A kit according to claim 181, wherein the antibody or antigen binding portion thereof binds to an epitope of PSMA which is also recognized by the J415 monoclonal antibody.

208. (New) A composition comprising:

an antibody or antigen binding portion thereof according to claim 159; and
a pharmaceutically acceptable carrier, excipient, or stabilizer.

209. (New) An antibody or antigen binding portion thereof which binds an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a J591 monoclonal antibody, wherein the antibody or antigen binding portion thereof is coupled to a cytotoxic drug of bacterial origin.

210. (New) An antibody or antigen binding portion thereof which binds an epitope of prostate specific membrane antigen (PSMA) which is also recognized by a J415 monoclonal antibody, wherein the antibody or antigen binding portion thereof is coupled to a cytotoxic drug of bacterial origin.